

RETAINING WALLS



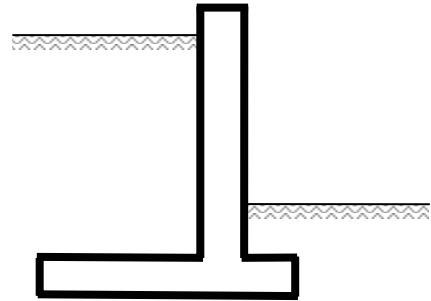
Fairfax County
VIRGINIA

Land Development Services

Department of Public Works and Environmental Services

Hours of Operation: Monday - Thursday: 8:00 a.m. to 4:00 p.m.
Friday: 9:15 to 4:00 p.m.

Location: **Herrity Building**
12055 Government Center Parkway
Fairfax, VA 22035-5504
Telephone: 703-222-0801
TTY: 703-324-1877



Visit us on the web at: www.fairfaxcounty.gov/dpwes

This publication provides guidelines for building a retaining wall in accordance with the *2000 Virginia Uniform Statewide Building Code*. More information is available in the *Fairfax County Typical Retaining Walls Details*.

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PERMITS REQUIRED

You must obtain a building permit for the construction of a retaining wall more than 4 feet in height, measured from the bottom of the footing. Apply for your permits at the **Permit Application Center** located at the Herrity Building, 2nd floor, telephone: **703-222-0801, TTY 703-324-1877**.

HELPFUL HINT: You may obtain permits in your own name; however, if a contractor is to perform the work, it is strongly recommended that the contractor secure the permit and be listed as the responsible party. In this way, the County will be in a better position to assist you in gaining compliance with codes if the work is defective. A contractor must be properly licensed in order to obtain a permit.

BEFORE OBTAINING A PERMIT

COVENANTS AND DEED RESTRICTIONS

Covenants and Deed Restrictions are regulations set forth by many homeowner or civic associations. While not enforced by Fairfax County, some regulations may restrict construction. For more information, contact your association or the Land Records office in the Jennings Building (Judicial Center), 3rd Floor, 4110 Chain Bridge Road, Fairfax, telephone: **703-691-7320, TTY 711**.

MINIMUM SUBMISSION REQUIREMENTS

All submissions for retaining walls must include the following:

- ☐ Two sets of building plans or the *Fairfax County Typical Retaining Wall Details* (see next page).
- ☐ Two copies of the house location plat (see page 3 for requirements).

BUILDING PLANS

There are two options for a plan submission; the requirements for each are listed below. When submitting plans, two complete sets are required for review.

1. COMPLETE SET OF PLANS

- ☐ Plans must be signed and sealed by a design professional registered in the Commonwealth of Virginia.
- ☐ Minimum scale of 1/4 inch = 1 foot; all dimensions must be shown.
- ☐ Code and code year used for the design.
- ☐ Specifications for the construction materials.
- ☐ Specification for the backfill material and compaction requirements.
- ☐ Wall elevations and multiple cross-sections of each retaining wall, to include structural details. The actual ground slope at the top and the toe of the retaining wall.
- ☐ Bearing capacity of the foundation soil.
- ☐ Sequence of construction of the retaining wall.
- ☐ Method of drainage behind the wall.
- ☐ Two copies of signed and sealed design calculations demonstrating the structural and geotechnical stability. Calculations shall address the effect of any surcharges on the wall, and shall use the following factors of safety:
 - Sliding = 1.5
 - Overturning = 1.5
 - Global = 1.5 for assumed soil parameters
 - Global = 1.25 for laboratory determined soil parameters
- ☐ Global Stability Analysis performed by a geotechnical engineer for the following conditions:
 - Walls with back slope steeper than 4H:1V and on unstable (landslide prone) soils as identified on Fairfax County Soil Maps. The soil types are: 49-Lunt, 61-Loamy, Gravelly Sediments, 64-Silty/Clayey Sediments, 118-Marine Clay, 149-Lunt.
 - Walls with back slope steeper than 2H:1V and height over 6 feet.
 - Walls over 10 feet in height regardless of back slope.
- ☐ All walls 10 feet in height and over shall meet the requirements of the Special Inspections Program.
- ☐ Segmented walls and other proprietary products require submission of the manufacturer's information and specifications, a valid ICC Evaluation Report and design calculation signed and sealed by a registered design professional.
- ☐ Guardrail location and details for retaining wall systems 30 inches and higher, to protect pedestrian traffic when applicable.
- ☐ All below grade earth retaining structures, such as slope stabilizing piles, piers, caissons, sheeting and shoring structures require permits. The location, spacing, depth, sizes of these structures, and a valid evaluation report, when applicable, shall be shown on the construction documents submitted with the building permit application. All below grade earth retaining structures shall meet the requirements of the Special Inspection Program.
- ☐ Multiple retaining walls located on the same lot may be included on one building permit provided the walls will be inspected and completed at the same time. If a single retaining wall crosses more than one lot, the building permit for the wall must have received its approved final inspections before the structure(s) on any affected lot can receive a final inspection.

2. FAIRFAX COUNTY TYPICAL RETAINING WALL DETAILS

A copy of the *Fairfax County Typical Retaining Wall Details* is attached. **For residential use only**, these details may be used in lieu of submitted drawings. Retaining walls which do not meet the following conditions may not use the *Typical Retaining Wall Details*.

- ☐ Retain less than 5 feet of earth.
- ☐ Not subject to any imposed loads. i.e. driveways, footings for decks, addition or structures.
- ☐ Must not deviate from the typical details in any way.
- ☐ Cannot be tiered or stacked. The upper and lower wall shall have a horizontal separation at least the same as the lower wall is high.
- ☐ Cannot be used in problem soil areas.

HOUSE LOCATION PLATS

If you do not have a copy of your house location plat, review your loan closing documents or contact your mortgage lending institution to obtain one. You may also contact the Zoning Permit Review Branch on the 2nd floor of the Herrity Building, telephone **703-222-1082, TTY 711**; **please note:** plats are not available for all properties. If you are unable to locate a copy of your plat through these sources, you will be required to hire a certified land surveyor or civil engineer to have one prepared.

SOILS

Retaining walls constructed in an unmapped or problem soil require special requirements; see below. For more information, contact the Site Permits Branch on the 2nd floor of the Herrity Building, telephone: **703-324-1510**.

- **Unmapped soils** occur where the soils have not been previously identified on soil maps. If your property falls within one of these unmapped areas, you must hire a soil scientist to identify the soil or you must design the foundation for a worst case soil situation. A brochure, entitled *Residential Construction in Unmapped Soils Areas*, is available for more assistance.
- **Problem soils** are soil types which may have a high water table, expansive clays, or other behavioral problems. If your property contains a problem soil, you may need to hire a registered design professional to design the foundation systems.

OBTAINING A PERMIT

PERMIT PROCESS

Bring the construction documents described herein to the Permit Application Center on the 2nd floor of the Herrity Building where your permit process will begin. Here you will complete a *building permit application*. Permit technicians will direct you to the appropriate agencies necessary for permit approval. The applicable departments for a retaining wall are:

- **Zoning** ensures setback requirements, as set forth by the County Zoning Ordinance, are maintained. The Zoning Permit Review Branch is located at the Herrity Building, 2nd floor, telephone: **703-222-1082, TTY 711**.
- **Site Permits** will review the plat for site-related issues, soils, and conformance to the *Chesapeake Bay Preservation Ordinance*. Site Permits is located at the Herrity Building, 2nd floor, telephone: **703-324-1510, TTY 711**.
- **Health Department**, located at 10777 Main Street, Fairfax, telephone: **703-246-2444, TTY 711**, will review for clearances to existing septic systems and/or wells if they exist on the property.

- **Building Plan Review Division**, located on the 2nd floor of the Herrity Building, telephone: **703-222-0114, TTY 711**, will review for compliance to the applicable building codes. This review is not required if the *Fairfax County Typical Retaining Wall Details* are used in lieu of submitted drawings.

The building permit is issued when all required approvals have been obtained and applicable fees have been paid. Once your permits are issued, you must post a copy on the job site until the project has received final approval. Residential retaining walls up to 5 feet in height are eligible for the Walk-Thru Program which allows you in most cases to apply for and obtain your permit in the same day.

FEES

For information on the related fees for a retaining wall contact the Permit Application Center at **703-222-0801, TTY 711** or visit **www.fairfaxcounty.gov/dpwes**, and the Health Department for fees related to septic systems and wells at **703-246-2444, TTY 711**.

AFTER OBTAINING A PERMIT

REQUIREMENTS FOR PUBLIC UTILITIES

You must call "Miss Utility," a free service, at **1-800-552-7001, TTY 711** before excavating to ensure that the construction does not interfere with underground utility lines. If you fail to contact Miss Utility and damage occurs, you will be liable for all costs of repair.

INSPECTION REQUIREMENTS

A copy of the approved permit, plat, and building plans must be on the job site and must be available to the inspector during each inspection. Several inspections are required for retaining walls:

		REQUIREMENTS PRIOR TO INSPECTION
INSPECTION TYPE		Notes: 1. Approval must be obtained prior to proceeding with the next applicable element. 2. All inspections are conducted by residential inspectors.
Timber	Retaining wall	• Timber wall and deadman placement.
	Final	• All backfilling procedures and construction of guardrail, if required.
Masonry or Concrete	Retaining wall (footing)	• The footing trench/framework must be prepared and inspection prior to placement of concrete. • The bottom of the footing must bear on solid ground. • If problem soils area, inspection must be made by geotechnical engineer.
	Retaining wall	• Concrete blocks or forms and reinforcing steel must be in place. • If Problem soils area, inspection must be made by geotechnical engineer.
	Retaining wall (water proofing)	• All parging and water proofing must be completed and drain pipe installed and tied to the proper outfall. • If problem soils area, inspection must be made by geotechnical engineer.
	Final	• All backfilling procedures and construction of guardrail, if required.

SCHEDULING AN INSPECTION

It is the responsibility of the permit holder or the permit holder's representative to notify the County when the stages of construction are reached that require an inspection. Ladders, scaffolds, and testing equipment required to complete an inspection must be provided. Inspection requests may be made using one of the three methods listed below; please have your permit number available when scheduling an inspection. Requests made prior to 11:59 p.m. on automated systems will be scheduled for the next workday.

- Inspection Request Center: **703-222-0455, TTY 711**, 8:00 a.m. to 4:30 p.m., Monday – Thursday, and 9:15 a.m. to 4:30 p.m. on Fridays.
- Automated Inspection Request System (AIRS): **703-222-2474, TTY 711**, 24 hours a day, seven days a week. Please note the inspection codes below.

Inspection type	Code
Retaining Wall	63
Final	10

- Building Code Services Online: ***www.fairfaxcounty.gov/isisnet***, 24 hours a day, and seven days a week.

Fairfax County is committed to a policy of nondiscrimination in all County programs, services and activities and will provide this document in alternative formats and in different languages upon request. Please call 703-324-5033, TTY 711 or write Department of Public Works and Environmental Services, Suite 659, 12055 Government Center Parkway, Fairfax, VA 22035-5506. Please allow at least seven working days for preparation of material.